STRATEGY RESEARCH PROJECT

MEDICAL SUPPLY PRIME VENDOR: IS THE DEPARTMENT OF DEFENSE ON THE "READINESS" ROAD TO ABILENE?

BY

COLONEL DARRYL W. LLOYD
United States Army

USAWC CLASS OF 1996

U.S. ARMY WAR COLLEGE, CARLISLE BARRACKS, PA 17013-5050

USAWC STRATEGY RESEARCH PROJECT

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited

MEDICAL SUPPLY PRIME VENDOR: IS THE DEPARTMENT OF DEFENSE ON THE "READINESS" ROAD TO ABILENE?

by

Colonel Darryl W. Lloyd
United States Army

Colonel Joseph C. Bowen
Project Adviser

U.S. Army War College
Carlisle Barracks, Pennsylvania 17013-5050

ABSTRACT

AUTHOR: Darryl W. Lloyd (COL), USA

TITLE: Medical Supply Prime Vendor: Is the Department of Defense (DOD) on the "Readiness" Road to Abilene?

FORMAT: Strategy Research Project

DATE: 15 April 1996 PAGES: 23 CLASSIFICATION: Unclassified

Adopting commercial medical prime vendor (PV) practices has eroded the traditional defense medical supply infrastructure and impacted DOD's ability to support two nearly simultaneous major regional crises. This study examines the readiness implications of PV in reducing inventory levels within the Defense Personnel Support Center depots, U.S. Army installation support activities, and U.S. Army medical field units. Also highlighted are DOD and service initiatives to test PV support under contingency conditions, to contract alternative solutions to PV shortfalls, and to institute other business enhancements. This study argues that DOD is presently in a transitionary period and that vulnerabilities will persist until recent acquisition strategies have been implemented. Finally, other readiness-related concerns and recommendations are addressed regarding the diminishing medical materiel infrastructure and the diminishing training base.

INTRODUCTION

In the early 1990s, acute dissatisfaction with the medical materiel support provided by the Defense Personnel Support Center (DPSC) of the Defense Logistics Agency (DLA) was undeniable. The DPSC system, viewed both internally and externally as an archaic centralized depot system, desperately needed profound and fundamental re-engineering. Aptly characterized as a *Byzantine* network of Government warehouses, the system was fraught with mal-invested inventories, extraordinary inventory layering and accompanying overhead, excessive depot order-shipment time frames, exorbitant destructions of expired stocks, and expensive alternative local procurement.[1]

Eager to remedy these financial and responsiveness maladies, both DPSC and the services aggressively researched emerging civil healthcare prime vendor (PV) business practices. A PV operates as a single distributor of commercial medical supplies for a group of hospitals in a given geographic region.[2] Studies conducted by the General Accounting Office (GAO), the Corporate Information Management (CIM) Office (Medical Logistics Sub-group) within Department of Defense for Health Affairs (DOD/HA), DPSC, and the separate services substantially validated the potential benefits of applying commercial medical PV programs within DOD. The benefits of PV promised decreased inventories, decreased

operating costs, and reduced customer response time through a 24-hour delivery service.[3]

Despite such demonstrated PV advantages in the commercial sector, senior military leaders have harbored concerns over the adverse impact that PV programs would have on DOD's ability to meet the medical materiel needs of two nearly simultaneous major regional crises (MRCs).[4] The legitimate and discomfiting issues raised by these leaders which directly affect combat readiness merit a re-examination and are the focus of this research effort. This study will highlight the PV-related changes which have occurred within the Defense medical supply system, the impact of these changes on the sustaining base, and the initiatives underway or in planning to resolve readiness-related shortcomings. Lastly, it will allay or substantiate concerns over DOD's possible trip down *the readiness road to Abilene*.

This imaginary trip suggests a possible analogy between the group decisions in adopting PV practices by the defense medical community and the group decision by friends in making a spontaneous but undesired trip to Abilene. Thoroughly convinced that each of the others wanted to go, the members departed only to discover after arriving that no one truly wanted to go or believed that it was a good idea. This ill-conceived group decision has been popularized as the "Abilene Paradox."[5]

HISTORICAL BACKGROUND

Medical materiel readiness has taken a "back seat" in recent years to the seductive lure of better business practices--despite ubiquitous claims that readiness constitutes the highest defense priority. Aggressive customer and GAO pressure on DLA and the services to capture health care-related savings and to markedly improve peacetime efficiencies have in effect relegated military medical supply readiness to subordinate status. To this end, GAO reports and recommendations have consistently stressed the cost and operational efficiencies associated with PV practices, but these reports have failed to recognize their possible consequences to military readiness, according to DOD.[6]

To the soldier in the field, an ominous indicator of this lower priority has been the slow genesis of contingency or readiness support requirements in regional PV contracts. As we shall see, DPSC's first tangible efforts in this regard did not begin bearing fruit until mid-1995.

PRIME VENDOR IMPACT ON THE DOD SUPPORT BASE

Revealing the structural impact of medical PV should logically begin at DPSC, where the effect on the wholesale depot medical inventories has been profound. In December 1990, depot-held peacetime and wartime medical assets exceeded 16,000 items,

8500 of them pharmaceutical, which were valued at $540 million according to GAO. The total inventory on-hand at that time would have sustained approximately 250 operating days of defense requirements.[7] This indicator, referred to as *days of supply (DOS) on-hand*, not only reflects operational sustainment potential for normal demands but also measures how efficiently a business manages its inventory investment.[8] Of the total depot inventory, GAO noted that an estimated $52 million (ten percent) was designated as war reserves (WR) for initial wartime supplies.[9]

By September 1995, depot-held supplies plunged below 6000 items, 200 of them pharmaceutical, with an aggregate value of $234 million.[10] A corresponding drop of over 50 percent in the DOS has occurred as well. Roughly half (45.8 percent) of the current inventory is either WR supplies intended for existing wartime medical assemblages or those items having a unique military application, such as camouflage face paint. The remaining depot items are generally intended for usage in peacetime health care DOD hospitals.[11]

DPSC plans to reduce depot-held medical items to less than 2000 items, depending on the outcome of ongoing efforts to establish partnerships with industry. Of the 2000 items, only 90 are expected to be military-unique.[12] The vast majority of that number will be long-lead time medical/surgical (non-

pharmaceutical) items and repair parts, while only 150 items will be pharmaceuticals.[13]

Owing to a new philosophy of "buying response vice inventory," DPSC's role has fundamentally shifted from one of procuring, storing, and distributing wholesale medical supplies to one of contracting and paying for them. The architecture for this functional shift is now virtually complete. Twenty of the 21 worldwide PV regional contracts have been awarded to *pharmaceutical* distributors and manufacturers. In addition, 11 of 23 regional contracts have been awarded to *medical/surgical* distributors.[14] As an indicator of DOD's growing reliance on these suppliers, PV sales in 1994 totaled $180 million, or 24 percent of DLA's total medical sales.[15] For 1995, DLA PV sales soared to $474 million, or 54 percent of total medical sales. The expected and telling effect of these aggressive PV initiatives has been to reduce wholesale medical inventories by 41 percent since 1993.[16] In short, the traditional DPSC depot system has effectively vanished.

Below the DPSC depot level, the next measure of PV influence involves the intermediate and retail [and consumer] inventories held within the peacetime military hospitals. To reap the greatest dividend from PV reforms, U.S. Army Medical Command (USAMEDCOM) has established a policy that if an item is available from a PV, hospital retail supply activities will not stock the

item.[17] This policy will effectively incorporate commercial sector *just-in-time* (JIT) and *stockless* PV distribution systems within military hospitals.

Such distribution systems eliminate inventory layering within hospitals by means of frequent, central or point-of-use replenishment by local PV distribution centers. For example, pharmaceutical items should be delivered to and centrally distributed by Army hospital pharmacies, not retail materiel warehouses. Among DOD hospitals, Walter Reed Army Medical Center (WRAMC), the largest of all military hospitals, has earned recognition by GAO as having built the "most successful" pharmaceutical PV program to date. By aggressively partnering with the regional PV, WRAMC has reduced its inventories by $3.8 million and has saved over $6 million in related inventory management expenses.[18]

Regarding medical/surgical supplies, Army hospitals are also adopting "point-of-use" delivery procedures for operating rooms, critical care areas, wards, and clinics because it is fiscally prudent. An independent study conducted for Brooke Army Medical Center, the Army's second largest medical complex, corroborated that hospital-wide point-of-use PV distribution of medical/ surgical items would save millions and enhance customer satisfaction.[19] The ultimate and desired outcome of these practices are intended to reduce Army hospital inventories from

levels as high as 95 days of supply or more to a range of three to fourteen days.[20]

Although WRAMC is atypical among DOD hospitals according to GAO, the inventory trends in Army hospitals are emphatically clear.[21] By adopting JIT or stockless inventory commercial practices, intermediate level medical inventories within Army hospitals will no longer be available to supply deploying medical units from on-hand stocks. According to USAMEDCOM, intermediate inventories have indeed attrited from $70 million in 1992 to $23 million in 1995. For the near term, USAMEDCOM is pursuing an ambitious goal of reducing intermediate inventories to a low of $10 million in 1997.[22] Thus future deploying units will rely on PVs or WR stocks for their initial go-to-war medical supplies not already on hand. The exception to this emerging rule will be situations in which special, case-by-case arrangements have been made between a specific field medical unit and a military hospital.

Lastly, the advantages of PV support have directly influenced policies for Army field medical units. After weighing the performance benefits of PV and the capital investment required to maintain pharmaceutical items in Army field medical assemblies, US Army Forces Command (USAFORSCOM) has tangibly altered its policy for such medical materiel. As of August 1995, USAFORSCOM policy regarding medical readiness reporting

requirements relieves medical unit commanders of the responsibility for maintaining potency and dated medical materiel and for reporting such items in their Unit Status Report (USR).[23] To meet the requirements for these mission essential basic load items, commanders will henceforth rely largely on ad hoc individual unit arrangements with their regional PV, until a more centralized program matures.

The DOD/HA, DPSC, and Army Medical Department (AMEDD) have initiated a rapid paradigm shift in medical material resupply, thereby affecting both peacetime and wartime sustainment. The potential for windfall savings of peacetime-oriented PV programs has driven the undeniable priority of these programs over wartime readiness support. But because of the intensified efforts of DPSC and the services, a clear game plan has now emerged to examine and resolve most readiness-related deficiencies. As a result, the window of vulnerability for wartime readiness is closing.

PRIME VENDOR SUPPORT VERSUS THE READINESS TRAINING BASE

The transition to PVs has daunting implications for training as well. As a consequence of the advantages that PV offers through vendor managed inventories, PV has eroded the medical supply training base within the military hospitals. The dilemma is two-fold.

First, peacetime hospital operations have historically played a principal role in simulating wartime medical materiel management procedures and systems. PV has supplanted much of this fertile training ground, rich in "real world" automated systems and problem-solving experiences. For example, less than 15 percent of the medical materiel officers within the AMEDD today are being assigned to positions that directly involve automated materiels management systems.[24]

Second, peacetime and wartime procedures are truly divergent, especially for the Army. In peacetime, PVs are performing an increasingly disproportionate share of inventory management, warehousing, distribution, and replenishment functions associated with military hospitals. In projecting U.S. forces, however, there remains no strategic vision to integrate "forward PV support" capabilities into operational deployments. PVs will remain behind, while their critical resupply functions will fall to soldiers to perform in the theater of operations. Unlike their experience with peacetime military hospital support, ward, clinic, service managers will again be charged with managing/replenishing their departmental inventories, while medical supply personnel will be administering theater inventories for the hospital--all performing under severe, high optempo conditions.[25] Since the Army and the AMEDD face increasing reductions in force, the time may have come to extend the PV partnership into the theater of operations.

PRIME VENDOR SUPPORT OF MILITARY OPERATIONS

Despite their peacetime orientation, PV contracts have been used increasingly in medical supply support of military operations. Since 1993, deploying field medical units have been provisioned in large part from PV suppliers, despite the absence of formal contingency support contracts. Early and close communication between the field unit and the supporting contractors has proven to be the key to PV support of rapid deployments. Advanced warning of such deployments has allowed the PV time to acquire unavailable items from other PV distribution centers or manufacturers as required.

Once deployed, moreover, forward Army medical logistics units have drawn extensively on CONUS PV contractors for medical resupply of their customers--using hasty, ad hoc contractual or informal PV arrangements. Most frequently, support requests have been electronically communicated by means of international maritime satellites (INMARSAT) back through home stations such as those at Fort Hood and Fort Bragg, then to a regional PV.[26]

To date, PVs have in varying degrees effectively supported several operational deployments: Restore Hope in Somalia; Uphold Democracy in Haiti; and refugee operations in Guantonimo Bay, Cuba, and Panama. For European deployments such as Operations Provide Comfort in Northern Iraq, Support Hope in Rwanda, and

Provide Promise in Bosnia, the U.S. Army Medical Materiel Center-Europe (USAMMCE) has similarly relied on CONUS PVs for resupplying forward units.[27] In general, DOD has experienced a decided willingness and ability of PV distributors to meet the demands of these *limited* operations.

Nonetheless, DPSC's ad hoc approach to PV contingency support has been both frustrating to the services and indicative of the secondary priority given to readiness issues. From an Army perspective, efforts by DPSC to provide for such support have been piecemeal and situation-driven. For example, there were no provisions for regional PV support of Army operations in Guantonimo Bay or in Haiti until prompted by necessity.[28]

During the past year, however, DPSC has moved forward with strategic plans to provide for PV contingency support worldwide; contracts are already in place for Europe. Based on current DPSC plans, all PV contracts will include readiness surge support by September 1996.[29]

PRIME VENDOR READINESS TEST EFFORTS

Given the increasingly indispensable role of the PV in readiness support, both the USAMEDCOM and the US Army Medical Materiel Agency (USAMMA) have been working to bridge the system's gap between Army active and reserve component hospitals and their

PV suppliers. In a critical first step, USAMMA sponsored a pharmaceutical PV test at Fort Lewis, Washington, during 7-18 August 1995.[30] The results were encouraging.

Prior to the test, a joint military and industry study group was formed to identify and address key issues. The group found that the single greatest obstacle to PV ordering centered on the national stock number (NSN) used by field hospitals to request their mission-essential supplies. In contrast, PVs use national drug codes (NDCs) for pharmaceutical items and manufacturer codes for medical-surgical supplies, not NSNs. To overcome this obstacle, a cross-reference database was developed prior to the test which identified multiple PV substitutes for each pharmaceutical hospital item. This substitution data base identified the preferred PV item as well as two suitable PV alternates for each NSN item within the field medical assemblies.[31]

To further simplify the ordering process, the participants took the innovative step of creating "ordering templates" for each different medical assembly or module. As a result, entire assemblies could be ordered from the PV by citing only one template number.[32] Their efforts paid dividends.

During the first five days of the test, the PV, McKesson Wholesale Drug, was able to provide 90 percent of the

pharmaceutical requirements for the 18th Mobile Army Surgical Hospital (MASH). An impressive 98 percent of the 1,299 pharmaceutical line items ordered (valued at $70,000) were supplied within 12 days. However, the test also revealed that McKesson had to rely on manufacturer sources for 26.4 percent of the items needed, even though the McKesson PV contract did not include a surge requirement to support conditions simulated by this test.[33]

Overall, the test successfully demonstrated McKesson's ability as a regional pharmaceutical PV to quickly provide a ten-day basic load of medications to an early deploying field hospital. The test, however, did not demonstrate McKesson's ability to support multiple deploying units, as would be likely in a MRC scenario. Quite the contrary, the 29 August 1995 Pharmaceutical PV In-Process Review (IPR) found that "Currently, PV's do not carry ample stock to support a multi-unit deployment, mobilization or theater sustainment."[34] As funding permits, USAMMA intends to conduct similar tests within the other 21 PV regions, but no formalized plans currently exist.

The PV readiness test was accomplished outside the scope of McKesson's contract due to the peacetime orientation of all such instruments at that time. Effective September 1995, however, DPSC awarded the PV pharmaceutical contract serving the European region--the first to include contingency surge requirements.[35]

Under the terms of the contract, the PV, Kendall Division of Bindley Western Drug Company, must deliver 95 percent of the order within three to ten days to Europe.[36]

Driven by real world events overseas, there was little delay in exploiting this new capability. In November 1995, the U.S. Army Medical Materiel Center-Europe (USAMMCE) exercised the PV surge clause with Kendall to support actual U.S. Implementing Force (IFOR) deployments to Bosnia for Operation Joint Endeavor. The results achieved using this PV force projection capability were excellent. Within three days, the PV was able to provide 100 percent of the pharmaceutical requirements for 30 Sick Call and 20 Trauma Sets. Within four days, Kendall supplied 98 percent of the requirements for two different combat support hospital resupply sets. The total order included 1,429 different pharmaceuticals, valued at $92,000.[37]

PRIME VENDOR LIMITATIONS AND OPTIONS

In 1993, a DPSC official optimistically announced that PV can "enable the services to maintain a viable and robust go-to-war [medical materiel] capability."[38] While this claim has been only partially validated, the extent to which PVs can support the initial surge or sustainment for two MRCs is debatable, as the McKesson test indicates. In a more realistic assessment, the USAMMA has recently indicated that while "PVs can provide medical

materiel to medical field units, the PV program is not the final and total solution" to medical materiel readiness.[39] Upon exhausting their available supplies, PVs must then compete against nation-wide demands for limited inventories held by manufacturers, unless other measures are taken.[40]

Furthermore, DOD has no guarantee that its commercial partners will maintain sufficient inventories to respond immediately to major operations. Asset visibility within DOD's commercial partners is largely restricted at this point.[41] Because PVs support a significant customer base on a lean stockage level, accurate, real-time knowledge of inventory is essential. Under the old paradigm, visibility of retail and wholesale depot stocks was available. Today's transition to PV and JIT has restricted DOD access to such information. As a result, future contracting efforts should include provisions for commercial asset visibility (CAV).

Surprisingly, the contingency surge modifications made by DPSC to date were awarded at no additional cost to DOD beyond the normal unit price. Furthermore, the Chief of Readiness, Directorate of Medical Materiel at DPSC, has indicated that the remaining regional PVs will probably follow Kendall's precedent.[42] Given that normal PV inventory levels are lean and not designed to accommodate unusual contingency requirements, it is unclear how surge inventories can be accommodated without

additional compensation, if they are to be reliable. Purchasing medical surge response at no cost is an unprecedented business practice within the healthcare industry in general.[43]

ORGANIZING FOR SUCCESS

To meet the full spectrum of wartime needs, DPSC, the services, and industry have collaborated in an aggressive effort to develop a comprehensive medical readiness business plan. To energize this endeavor, several high level working groups have been formed or re-engineered to spearhead and coalesce the effort.

A steering group, the Health Industry Federal Advisory Counsel (HIFAC), has played the lead role in marshaling civil healthcare industry insights and participation, much like the WWII era War Production Board. This Committee includes representatives from the Veteran's Administration, the Public Health Service, the military services, the DLA, as well as such major corporate suppliers as Baxter, Smith-Kline, Stewart Disease Management, Wyeth-Ayerst Laboratories, and Johnson & Johnson.[44] Another important contributor is the Business Practice Improvements and Medical Readiness Ad Hoc Group, formed under the auspices of the DOD/HA to examine issues ranging from the problems associated with commercial practices being adapted within DOD to sustainment issues involving the medical industrial

base. Representatives from the Joint Staff, the military services, DPSC, and industry have joined this group. Lastly, the Industrial Base Joint Working Group (IBJWG) was recently formed to survey the industrial base and to assess industry's capability in meeting DOD's readiness requirements.[45]

The collective effort of these groups have substantiated several relevant industry trends. First, pharmaceutical and medical/surgical manufacturers and distributors are both reducing their warehouse capacity and distribution centers. The group identified increased reliance on PVs to provide the distribution network, rather than a separate manufacturing network. Second, manufacturers remain the critical link for continued supply. Manufacturing capabilities are constrained by competing requirements against limited production centers, as well as by finite amounts of raw materiels. Third, the availability of medical materiel in the supply pipeline is drastically constricting. Manufacturers, PVs, and customers are all reducing overhead costs by adopting JIT business practices for both raw materiels and finished products.[46]

INDUSTRIAL PREPAREDNESS PLAN (IPP)

To contend with these trends and to develop the best feasible sustainment plan, the IBJWG initiated a comprehensive industrial preparedness survey last year. In total, the

availability of over 3,550 separate National Stock Numbered items is being reviewed with industry.[47] To facilitate coordination with industry and to encourage participation, DPSC has streamlined the traditional IPP survey. The results will identify those items whose production cannot be quickly increased and those items which may remain in short supply throughout the entire contingency period. Equally important, the results have forced the services to closely examine alternative modern drugs as replacements for the traditional, now hard-to-acquire medications. The most profound case to date includes the older family of penicillin antibiotics still found in many medical assemblies today.[48]

A variety of IPP-driven acquisition strategies have been undertaken to execute the plan, including Vendor Managed Inventory (VMI) and stock rotation contract arrangements. Foremost among the initiatives has been the VMI concept. In December 1995, DPSC announced the initiation of a phased VMI project to support DOD medical readiness efforts.[49] The program will significantly bridge the estimated three- to nine-month gap between the initial support provided by regional PVs and the delayed support provided by manufacturers.[50] Thus DOD medical sustainment requirements for contingency operations or during two MRCs can be satisfied in large part until the manufacturers are able to accelerate their production to meet the anticipated demands. Under the VMI concept, a commercial contractor, such as

a PV, would manage designated WR pharmaceutical or medical-surgical items to insure their proper rotation. As a result, fresh medical stocks would be available to satisfy WR requirements for sustainment, and DOD would be spared the expense of replacing expired materiel.[51]

Phase I of the VMI program will include 200-300 pharmaceutical items valued at $5 million, while Phase II will address medical/surgical supplies. This program will ultimately supplant much of the sustainment stocks no longer held in DPSC depots and provide significant sustainment support during contingency operations in a cost-efficient manner.[52]

For other DOD-owned warstopper items which cannot be supported by the industrial base, DPSC has established contracts directly with the manufacturer to store and rotate select government-owned inventories. A limited number of these contracts are in effect today: the Survival Industries contract to produce and store Nerve Agent Antidote being the most significant. As the IPP survey process develops, additional items will be included in this program due to their military-unique nature and extended production timeframes.[53]

DPSC has pursued other enhancements as well. First, DPSC has increased product availability through PVs by establishing distribution and pricing agreements (DAPAs) for over 130,000

pharmaceutical and medical-surgical items.[54] The participating manufacturer consents to allow PVs selected by DPSC to distribute its products at a fixed price. Such agreements allow large and small businesses alike to offer their products to military customers through the PV program, thereby broadening the base of support for peacetime and wartime needs. The success of this program was demonstrated during the Fort Lewis PV test, which produced a 94 percent match between NSNs and items on the DAPA database.[55]

Second, DPSC has been working with industry in developing Universal Product Numbers (UPNs) for medical/surgical supplies, much like the national drug codes (NDCs) which already exist for pharmaceutical items. This initiative is expected to eventually render NSNs obsolete and significantly streamline the process of identifying, ordering, and management of medical supplies.[56] Together, these two enhancements will greatly aid in meeting the broad spectrum of needs of deployed military providers.

MAJOR HURDLES AND RECOMMENDATIONS

First, to support nearly two MRCs, today's total DOD sustainment requirement is estimated to be $713 million--$597 million needed for the Army. The current shortfall in satisfying the total requirement is gauged at $395 million.[57] The cost of the acquisition strategy to meet this shortfall, using

government-owned and commercial inventory, will be born substantially by the services, mainly the Army.

Second, monitoring and testing the new commercial-based architecture will be both challenging and possibly expensive. Realistic simulation of inventory orders, issues, and movement, however, is becoming standard practice in major military exercises and is cost effective. Because of their vital relationship with DOD, commercial partners must be validated periodically in terms of their capabilities. To this end, contracts must provide for such testing, including joint war-gaming. An effective means for accomplishing such monitoring logically includes an automated interface or network to link prime sources, including their suppliers and carriers, with DOD.[58] With such a network, DOD can effectively test asset availability, sustainment capability based on planned deployment decisions, transportation procedures, and distribution resources needed for two MRCs.

Last, regarding the training dilemma, the AMEDD must closely examine the emerging differences between wartime and peacetime practices. Based on the results, an effective, top-driven strategy must be formulated that will preserve essential skills in automated inventory management, warehousing, distribution, and replenishment functions associated with deployed military hospitals. The following recommendation from an AMEDD after

action review of Operation Desert Storm succinctly captures the essentiality of such training:

> The medical supply officer for a field hospital in combat must be a field grade officer with specific training and experience in hospital supply due to the difficulty of the job in combat and the critical nature of the job.[59]

CONCLUSIONS

DOD can no longer afford to meet future medical logistics challenges using the traditional model of sheer mass. So DOD and the services should creatively seek to maximize PV and other industry options to balance short-term and long-term medical materiel objectives--without diminishing readiness. The military medical logistics system must remain well-prepared for the unpredictable and bloody confrontations of two MRCs, as well as for massive humanitarian assistance efforts.

Despite understandable concerns by military leaders, the available evidence indicates that DOD is not on the "readiness road to Abilene." Medical PV offers a promising commercial strategy that can satisfy a significant portion of the initial surge requirement for deploying medical units. However, the limitation of PV practices in supporting the National Military Strategy has yet to be fully determined. To achieve this end, PV and other commercial solutions such as VMI must be incorporated in routine readiness simulation tests.

Furthermore, until the DOD partnership with industry has fully matured, DOD is in a vulnerable period during its transition to better business practices. DOD's appreciation of this reality was reflected in the following statement from its Medical Readiness Strategic Plan 2001:

> The Department's changing peacetime medical logistics practices such as Prime Vendor support and Just-In-Time inventories are fast eroding the capability to support operations from DLA depot inventories. It is critical that new business practices be explored to support war-time and contingency operations. These new practices must focus on rapid access into the commercial medical logistics base.[60]

Clearly, many difficult medical supply readiness challenges lie ahead for DOD. As we continue to address these challenges and to develop prudent, workable solutions, we should recall the encouraging words of Albert Einstein: "It is within difficulty that great opportunity resides."

ENDNOTES

1. U.S. General Accounting Office, DOD Medical Inventory: Reductions Can Be Made Through the Use of Commercial Practices, Report to the Chairman, Subcommittee on Oversight of Government Management, Committee on Governmental Affairs, U.S. Senate, GAO/NSIAD-92-58, (Washington, D.C.: Government Printing Office, December 1991), 3-4.

2. U.S. Defense Logistics Agency (DLA), Defense Personnel Support Center (DPSC), Activity Performance Plan, Medical FY96, (Philadelphia, PA, 1995), 3.

3. DOD Medical Inventory, 5, 33-34.

4. U.S. Army Medical Materiel Agency, Office of Medical Materiel Readiness, "Minutes of the Materiel Readiness Conference, 13-14 September 1995," Frederick, MD, 1-3.

5. Jerry B. Harvey, management consultant, Abilene Paradox, 27 min. (Del Mar, CA: McGraw Hill Training Systems, 1984. Videocassette. The film illustrates the paradoxical nature of mismanaged agreement, describes the reasons behind the behavior, and offers strategies for eliminating collective decision-making confusion.

6. U.S. Department of Defense (DOD), Office of the Under Secretary of Defense (Logistics), "Memorandum from the Department of Defense," Washington, 21 June 1995.

7. DOD Medical Inventory, 24.

8. U.S. General Accounting Office, Inventory Management: DOD Can Build on Progress in Using Best Practices to Achieve Substantial Savings, Report to the Ranking Minority Member, Subcommittee on Oversight of Government Management and the District of Columbia, Committee on Governmental Affairs, U.S. Senate, GAO/NSIAD-95-142, (Washington, D.C.: Government Printing Office, August 1995), 14.

9. DOD Medical Inventory, 24.

10. Activity Performance Plan, Medical FY96, 36.

11. U.S. Defense Logistics Agency (DLA), Defense Personnel Support Center (DPSC), DPSC 1995 Annual Report, (Philadelphia, PA, December 1995), 5.

12. Activity Performance Plan, Medical FY96, 23.

13. Lou Pilla, Defense Logistics Agency (DLA), Defense Personnel Support Center (DPSC), telephone interview by author, 12 February 1996, "DPSC 1995 Annual Report."

14. Activity Performance Plan, Medical FY96, 3.

15. U.S. Defense Logistics Agency, Defense Personnel Support Center (DPSC), DPSC 1994 Annual Report, (Philadelphia, PA, December 1994), 10.

16. DPSC 1995 Annual Report, 24.

17. U.S. Army Medical Command (USAMEDCOM), Office of the Deputy Chief of Staff for Logistics, "Memorandum From the DCSLOG," San Antonio, TX, 30 September 1995.

18. Inventory Management: DOD Can Build on Progress, 38.

19. Ronald J. Lambert, COL, and Gerald R. Ledlow, CPT, Prime Vendor Options for Brooke Army Medical Center Logistics Department, May 1995, U.S. Army-Baylor University Graduate Program in Health Care Administration, San Antonio, TX, 5-6.

20. DOD Medical Inventory, 17.

21. Inventory Management: DOD Can Build on Progress, 38.

22. LTC Jerry L. Brown, U.S. Army, Chief of Supply Management Division, U.S. Army Medical Command, telephone interview by author, 16 January 1996.

23. U.S. Army Forces Command (USAFORSCOM), Office of the FORSCOM Surgeon, 1 August 1995, "Waiver of New Medical Readiness Reporting Requirements," Atlanta, GA.

24. LTC James D. Fairless, U.S. Army, Medical Field Service School, Medical Materiel and Facilities Branch, telephone interview by author, 27 December 1995.

25. U.S. Army Medical Command (USAMEDCOM), Office of the Deputy Chief of Staff for Logistics, "Memorandum From the DCSLOG," San Antonio, TX, 30 June 1995.

26. U.S. Army Medical Command, Logistics Management Bulletin, (San Antonio, Texas: Office of the Deputy Chief of Staff for Logistics, 1 July 1995), 10.

27. Ibid.

28. Ibid.

29. DPSC 1995 Annual Report, 16.

30. U.S. Army Medical Materiel Agency (USAMMA), Office of Medical Materiel Readiness, "Pharmaceutical Prime Vendor (PV) Study, Fort Lewis, WA, 17-18 August 1995," enclosure to memorandum for The Army Surgeon General, Logistics Directorate, Frederick, MD, 1 November 1995, 1.

31. Ibid., 2.

32. Ibid.

33. Ibid., 7.

34. U.S. Army Medical Command, Office of the Deputy Chief of Staff for Logistics, "Minutes of the Prime Vendor (PV) In-Process Review (IPR)," San Antonio, TX, 6 September 1995, 4.

35. U.S. Department of Defense (DOD), Office of the Secretary of Defense for Health Affairs (OASD/HA), Directorate of Medical Logistics, "Minutes of the Business Practice Improvements and Medical Readiness Ad Hoc Group," Washington, D.C., 20 April 1995, 1.

36. U.S. Defense Logistics Agency (DLA), Defense Personnel Support Center (DPSC), Contract SP0200-95-D-7013 dated 29 March 1995 as modified by Amendment P00002, Philadelphia, PA, 5 September 1995, 18.

37. LTC Tony W. Johnson (johnson@permasens-tammis1.army.mil), "PV Transportation Requirements, FY97," electronic mail message to MAJ Larry Stallings (maj_larry_stallings@smtplink.medcom.amedd.army.mil), 29 November 1995.

38. Sara M. Bird, "Prescription for Change," Army Logistician (November-December 1993): 20.

39. U.S. Army Medical Materiel Agency (USAMMA), Newsletter of the United States Army Medical Materiel Agency, Vol. 5, No. 4, (Frederick, MD, July-August 1995), 2.

40. "Minutes of the Materiel Readiness Conference, 13-14 September 1995," 4.

41. U.S. Department of Defense (DOD), Defense Medical Standardization Board (DMSB), Pharmaceutical Division, "Surge/Deployment/Sustainment PAT Meeting of 13 October 1995," memorandum for PAT Team members, Frederick, MD, 16 October 1995, 3-4.

42. LTC Michael Brywka, Jr., U.S. Army, Defense Personnel Support Center (DPSC), Directorate of Medical Materiel, Readiness Commodity Business Unit (CBU), telephone interview by author, 19 January 1996.

43. "Minutes of the Materiel Readiness Conference, 13-14 September 1995," 4.

44. U.S. Army Medical Command (USAMEDCOM), Office of the Surgeon General (Army), Health Care Logistics, "Health Industry Federal Advisory Council (HIFAC) Minutes, 15 November 1995," Washington,

D.C., 15 November 1995, 1.

45. U.S. Defense Logistics Agency (DLA), Defense Personnel Support Center (DPSC), Directorate of Medical Materiel, "Industrial Base Joint Working Group (IBJWG) Minutes, 10 August 1995," Philadelphia, PA, 15 August 1995, 1.

46. "Pharmaceutical Prime Vendor (PV) Study, Fort Lewis, WA, 17-18 August 1995," 1.

47. "Industrial Base Joint Working Group (IBJWG) Minutes, 10 August 1995," 1.

48. U.S. Defense Logistics Agency (DLA), Defense Personnel Support Center (DPSC), Directorate of Medical Materiel, "Industrial Base Joint Working Group (IBJWG) Minutes, 18 December 1995," Philadelphia, PA, 29 December 1995, 2.

49. U.S. Defense Logistics Agency (DLA), Defense Personnel Support Center (DPSC), "Request for Information No. SPO200-Q-96-AG01," memorandum for commercial pharmaceutical companies regarding the vendor managed inventory (VMI) project, Philadelphia, PA, 20 December 1995, 1.

50. "Minutes of the Pharmaceutical Prime Vendor Study, Fort Lewis, WA, 17-18 August 1995", 1.

51. "Request for Information No. SPO200-Q-96-AG01," 20 December 1995, 1-2.

52. Ibid.

53. U.S. Defense Logistics Agency (DLA), Defense Personnel Support Center (DPSC), Directorate of Medical Materiel, "Medical Readiness Strategic Plan (MRSP) 2001, Request for Implementation Plan," memorandum for the Director of the Defense Logistics Agency, Philadelphia, PA, 15 June 1995.

54. DPSC 1995 Annual Report, 14-15.

55. "Minutes of the Pharmaceutical Prime Vendor Study, Fort Lewis, WA, 17-18 August 1995", 1 November 1995, 2.

56. U.S. Army Medical Command (USAMEDCOM), Office of the Surgeon General (Army), Health Care Logistics, "Health Industry Federal Advisory Council (HIFAC) Minutes, 22 February 1995," Washington, D.C., 22 February 1995, 2.

57. LTC Michael Brywka, Jr., U.S. Army, Defense Personnel Support Center (DPSC), Directorate of Medical Materiel, "Medical Readiness Sustainment Support," briefing presented to the Defense Logistics Agency (DLA) Command Group, Philadelphia, PA, 18 January 1996.

58. U.S. General Accounting Office, Customer-Supplier Relationships Can Be Improved Through Partnering, Report to the Chairman, Legislation and National Security Subcommittee, Committee on Government Operations, House of Representatives, (GAO/NSIAD-94-173, Washington, D.C.: General Printing Office, July 1994), 20.

59. U.S. Department of the Army, Office of the Surgeon General, Consultants Division, "1991 Professional After Action Review - Operation Desert Storm," memorandum for readers, Falls Church, VA, 9 October 1991, 4-10.

60. U.S. Department of Defense (DOD), Office of the Assistant Secretary of Defense, Health Affairs, Medical Readiness Strategic Plan 2001, (Washington, D.C., 1994), D-2.

BIBLIOGRAPHY

Bird, Sara M. "Prescription for Change." Army Logistician (November-December 1993): 18-20.

Brown, Jerry L., LTC, U.S. Army, U.S. Army Medical Command (USAMEDCOM), Supply Management Division. Telephone interview by author, 16 January 1996.

Brywka, Michael, Jr., LTC, U.S. Army, Defense Personnel Support Center (DPSC), Directorate of Medical Materiel. "Medical Readiness Sustainment Support." Briefing presented to the Defense Logistic Agency (DLA) Command Group, Philadelphia, PA, 18 January 1996.

Brywka, Michael, Jr., LTC, U.S. Army, Defense Personnel Support Center (DPSC), Directorate of Medical Materiel, Readiness Commodity Business Unit (CBU). Telephone interview by author, 19 January 1996.

Fairless, James D., LTC, U.S. Army, Medical Field Service School, Medical Materiel and Facilities Branch. Telephone interview by author, 27 December 1995.

Harvey, Jerry B., management consultant, Abilene Paradox. 27 min. Del Mar, CA: McGraw Hill Training Systems, 1984. Videocassette.

Johnson, Tony W., LTC, (johnson@permasens-tammis1.army.mil). "PV Transportation Requirements, FY97." Electronic mail message to MAJ Larry Stallings (maj_larry_stallings@smtplink.medcom.amedd.army.mil), 29 November 1995.

Lambert, Ronald J., COL, and Gerald R. Ledlow, CPT. Prime Vendor Options for Brooke Army Medical Center Logistics Department. U.S. Army-Baylor University Graduate Program in Health Care Administration. San Antonio, TX, May 1995.

Pilla, Lou, Defense Logistics Agency (DLA), Defense Personnel Support Center (DPSC). Telephone interview by author, 12 February 1996, "DPSC 1995 Annual Report."

U.S. Army Forces Command (USAFORSCOM), Office of the FORSCOM Surgeon. "Waiver of New Medical Readiness Reporting Requirements." Atlanta, GA, 1 August 1995.

U.S. Army Medical Command (USAMEDCOM), Office of the Deputy Chief of Staff for Logistics. "Memorandum From the DCSLOG." San Antonio, TX, 30 June 1995.

U.S. Army Medical Command (USAMEDCOM). Logistics Management Bulletin. San Antonio, Texas: Office of the Deputy Chief of Staff for Logistics, 1 July 1995.

U.S. Army Medical Command (USAMEDCOM), Office of the Deputy Chief of Staff for Logistics. "Minutes of the Prime Vendor (PV) In-Process Review (IPR)." San Antonio, TX, 6 September 1995.

U.S. Army Medical Command (USAMEDCOM), Office of the Deputy Chief of Staff for Logistics. "Memorandum From the DCSLOG." San Antonio, TX, 30 September 1995.

U.S. Army Medical Materiel Agency (USAMMA). Newsletter of the United States Army Medical Materiel Agency, Vol. 5, No. 4, (Frederick, MD, July-August 1995), 1-15.

U.S. Army Medical Materiel Agency (USAMMA), Office of Medical Materiel Readiness, "Minutes of the Materiel Readiness Conference, 13-14 September 1995."

U.S. Army Medical Materiel Agency (USAMMA), Office of Medical Materiel Readiness. "Pharmaceutical Prime Vendor (PV) Study, Fort Lewis, WA, 17-18 August 1995." Enclosure to memorandum for The Army Surgeon General, Logistics Directorate. Frederick, MD, 1 November 1995.

U.S. Department of the Army (DA), Office of the Surgeon General, Consultants Division. "1991 Professional After Action Review - Operation Desert Storm." Memorandum for readers, Falls Church, VA, 9 October 1991, 4-10.

U.S. Department of the Army (DA), Office of the Surgeon General, Health Care Logistics. "Health Industry Federal Advisory Council (HIFAC) Minutes, 22 February 1995." Washington, D.C., 22 February 1995.

U.S. Department of the Army (DA), Office of the Surgeon General, Health Care Logistics. "Health Industry Federal Advisory Council (HIFAC) Minutes, 15 November 1995." Washington, D.C., 15 November 1995.

U.S. Department of Defense (DOD), Defense Medical Standardization Board (DMSB), Pharmaceutical Division. "Surge/Deployment/ Sustainment PAT Meeting of 13 October 1995." Memorandum for PAT Team members. Frederick, MD, 16 October 1995.

U.S. Department of Defense (DOD), Office of the Assistant Secretary of Defense, Health Affairs, 1994. Medical Readiness Strategic Plan 2001. Washington, D.C., 1994.

U.S. Department of Defense (DOD), Office of the Under Secretary of Defense (Logistics). "Memorandum from the Department of Defense." Washington, D.C., 21 June 1995.

U.S. Department of Defense (DOD), Office of the Secretary of Defense for Health Affairs (OASD/HA), Directorate of Medical Logistics. "Minutes of the Business Practice Improvements and Medical Readiness Ad Hoc Group." Washington, D.C., 20 April 1995.

U.S. Defense Logistics Agency (DLA), Defense Personnel Support Center (DPSC). Activity Performance Plan, Medical FY96. Philadelphia, PA, 1995.

U.S. Defense Logistics Agency (DLA), Defense Personnel Support Center (DPSC). DPSC 1994 Annual Report. Philadelphia, PA, December 1994.

U.S. Defense Logistics Agency (DLA), Defense Personnel Support Center(DPSC). DPSC 1995 Annual Report. Philadelphia, PA, December 1995.

U.S. Defense Logistics Agency (DLA), Defense Personnel Support Center (DPSC), Directorate of Medical Materiel. "Industrial Base Joint Working Group (IBJWG) Minutes, 10 August 1995." Philadelphia, PA, 15 August 1995.

U.S. Defense Logistics Agency (DLA), Defense Personnel Support Center (DPSC), Directorate of Medical Materiel. "Industrial Base Joint Working Group (IBJWG) Minutes, 18 December 1995." Philadelphia, PA, 29 December 1995.

U.S. Defense Logistics Agency (DLA), Defense Personnel Support Center (DPSC). Contract SP0200-95-D-7013 dated 29 March 1995 as modified by Amendment P00002. Philadelphia, PA, 5 September 1995.

U.S. Defense Logistics Agency (DLA), Defense Personnel Support Center (DPSC). "Request for Information No. SP0200-Q-96-AG01." Memorandum for commercial pharmaceutical companies regarding the vendor managed inventory (VMI) project. Philadelphia, PA, 20 December 1995.

U.S. Defense Logistics Agency (DLA), Defense Personnel Support Center (DPSC), Directorate of Medical Materiel. "Medical Readiness Strategic Plan (MRSP) 2001, Request for Implementation Plan." Memorandum for the Director of the Defense Logistics Agency. Philadelphia, PA, 15 June 1995.

U.S. General Accounting Office (GAO). Report to the Chairman, Legislation and National Security Subcommittee, Committee on Government Operations, House of Representatives. Customer-

Supplier Relationships Can Be Improved Through Partnering. GAO/NSIAD-94-173. Washington, D.C.: Government Printing Office, July 1994.

U.S. General Accounting Office (GAO). Report to the Chairman, Subcommittee on Oversight of Government Management, Committee on Governmental Affairs, U.S. Senate. DOD Medical Inventory: Reductions Can Be Made Through the Use of Commercial Practices. GAO/NSIAD-92-58. Washington, D.C.: Government Printing Office, December 1991.

U.S. General Accounting Office (GAO). Report to the Ranking Minority Member, Subcommittee on Oversight of Government Management and the District of Columbia, Committee on Governmental Affairs, U.S. Senate. Inventory Management: DOD Can Build on Progress in Using Best Practices to Achieve Substantial Savings. GAO/NSIAD-95-142. Washington, D.C.: Government Printing Office, August 1995.